

REMARKS

Claims 1-3 and 6-8 have been amended, claims 9-12 have been canceled from the application without prejudice or disclaimer and new claims 13-22 have been added to improve the clarity of the claimed subject matter and to place the application in early condition for allowance. All of the amendments are fully supported by the original disclosure of this application and therefore do not constitute the introduction of any new matter into the application.

The Examiner requires an affirmation of the provisional election of Group I (Claims 1-9) drawn to an apparatus. In this regard, applicant affirms this election and has canceled the non-elected subject matter subject to the right to file a divisional application thereto.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE"

Claims 1-8 and claims 13-22 remain pending in this application, upon entry of the amendments set forth above. All of the claims now remaining in the application are in full compliance with 35 USC 112 and are clearly patentable over the references of record.

Claim Rejection under 35 U.S.C. 102

Applicants have carefully considered the rejection of claims 1-7 and 9 under 35 U.S.C. section 102(b) as anticipated by the Harada et al.(USP 5,112,641) patent. This rejection has been carefully considered but is most respectfully traversed.

Applicants wish to direct the Examiner's attention to MPEP § 2131 which states that to anticipate a claim, the reference must teach every element of the claim.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed Cir.

1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed.Cir. 1990).

Applicants most respectfully submit that Harada et al. neither discloses nor suggests a substrate processing apparatus of the present invention. The claim limitations must be found in the reference arranged as required by the claim which is clearly not the case. In this regard, Applicants note that Harada et al do not describe the claim limitation of the presently claimed invention in which the cleaning gas line introduces the cleaning gas into the reaction chamber to thereby clean the dummy substrate supported by the boat in the reaction chamber. See amended claim 1 and added claims 13 and 22 (and supported by page 6, lines 22-25 of the original specification and Fig. 1) in this regard. This is a claim limitation which cannot be ignored and fully distinguishes the claimed invention over this prior art.

The gas means in Harada et al. claimed to be inherent by the Examiner merely represents the gas means for the sole purpose of supplying reaction gas into the reaction chamber for processing the process substrate as would be appreciated by one of ordinary skill in the art. Such a gas means is also equipped in the present invention in the name of the process gas line 9. In addition, the present invention further includes the cleaning gas line for supplying cleaning gas for eliminating accumulated deposit layers on the dummy substrates. Therefore, it is clear that Harada is totally silent about the reaction chamber in which dummy substrates are cleaned and the cleaning gas line therefor. Accordingly, for this reason the claimed subject matter is not anticipated by the reference.

Applicants also note that in the presently claimed invention in which the counter counts the number of times each dummy substrate in the stocker has been processed and the dummy substrate reached the pre-specified usage limit thereof is subject to the cleaning process as defined in amended claim 2 and added claim 14 (and supported by page 7, lines 4-6 and page 8, lines 8-17). This limitation is not taught. In Harada, however, such counter enabling to monitor the number of usages of each dummy wafer

to determine the cleaning time is not disclosed, suggested or implied. Accordingly, it is most respectfully submitted that the amended claims 1 and 2 and added claims 13, 14 and 22 define a patentable invention over Harada et al.; and are, therefore, allowable and the rejection of these claims should be withdrawn.

Dependent claims 2 through 7 and 9 further limit the claims from which they depend and which claims for the above reasons, are not anticipated by the reference. Accordingly, it is most respectfully requested that this aspect of the rejection be withdrawn.

CLAIM REJECTION UNDER 35 USC 103(a)

The rejection of claim 8 under 35 USC 103(a) over Harada et al in view of Nakajima et al has been carefully considered but is most respectfully traversed.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Claim 8 requires that the boat is made of quartz which is not suggested by Harada et al, the primary reference. The Official Action urges that Nakajima et al teaches the use of a quartz wafer boat. However, what Nakajima et al actually teach

is that it is known to use quartz or silicon carbide wafer boats. The patent goes on to teach the use of a silicon carbide wafer boat. Thus, there is no motivation in the reference to make the wafer boat of quartz in accordance with the present invention. Obvious to try is not the standard of obvious under 35 USC 103(a). See also, *In re Fritch*, 23 USPQ 1780, 1784 (Fed Cir. 1992) ("It is impermissible to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps.).

Further, claims 3-8 and 15-21 depending directly or indirectly on claims 1 and 13, respectively, are allowable for the same reasons indicated with respect to claims 1 and 13 and further because of the specific features recited therein which, when taken alone and/or in combination with the features recited in claims 1 and 13, are not disclosed or suggested in the prior art reference.

Accordingly, in view of the amendments to the claims and the remarks above, withdrawal of the 103 rejection is most respectfully requested.

In the event there are any outstanding matters remaining in the present invention, the Examiner is invited to contact the undersigned attorney by telephone or facsimile at the numbers provided below.

To complete the record, Applicants would appreciate an indication in the next Official Action that the drawings are acceptable.

In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please replace claims 1-3 and 6-8 with the following amended claims.

1(Amended). A substrate processing apparatus, comprising:

a stocker which stores a multiplicity of dummy substrates;

a reaction chamber which cleans one or more dummy substrates selected among the dummy substrates stored in the stocker and [for simultaneously] batch-processes [processing] a plurality of process substrates to be used for producing semiconductor products;

a boat which loads [for loading] into the reaction chamber the process substrates and a portion of the dummy substrates stored in the stocker in order to process the process substrates and loads said one or more dummy substrates to clean same [into the reaction chamber]; [and]

[a stocker for storing a multiple number of dummy substrates, at least a portion of the dummy substrates being loaded into the reaction chamber together with the process substrates through the use of the boat;]

a carrier which transfers the process substrates, the portion of the dummy substrates and said one or more dummy substrates to the boat; and

a cleaning gas line which introduces a cleaning gas into the reaction chamber to thereby clean said one or more dummy substrates within the reaction chamber.

[wherein a dummy substrate cleaning process is carried out by loading the dummy substrates to be cleaned into the reaction chamber through the use of the boat and introducing a cleaning gas into the reaction chamber.]

2(Amended). The apparatus as recited in claim 1[, wherein there is a limit in the number of time of using each dummy substrate and the dummy substrate cleaning process is carried out for the dummy substrates used up to the limit.] further comprising a counter which counts the number of usages in batch-processing of each dummy

substrate stored in the stocker and wherein the number of usages of said one or more dummy substrates is not greater than a predetermined number.

3(Amended). The apparatus as recited in claim 1, wherein all the dummy substrates stored in the stocker are simultaneously [subject to the dummy substrate cleaning process] cleaned in the reaction chamber.

6(Amended). The apparatus as recited in claim 1, wherein the boat is simultaneously cleaned [during the dummy substrate cleaning process] while cleaning the dummy substrates.

7(Amended). The apparatus as recited in claim 6, wherein the reaction chamber is simultaneously cleaned [during the dummy substrate cleaning process] while cleaning the dummy substrates.

8(Amended). The apparatus as recited in claim 1, wherein the boat is a quartz boat [for accommodating] which accommodates a predetermined number of substrates.